Department of Pacific Affairs
Building on 20 years of the State, Society & Governance in Melanesia Program

Diabetes Control in the Federated States of Micronesia

Vicki Luker, Zag Puas, Marcus Samo and Sally Goodspeed In Brief 2018/14

Many Pacific island countries (PICs) report extraordinarily high rates of diabetes mellitus (Tukuitonga 2016). This disease contributes significantly to the dizzying regional and global increases in non-communicable diseases (NCDs). In the Federated States of Micronesia (FSM), the International Diabetes Federation (IDF) estimates that 12 per cent of persons aged 20–79 suffer diabetes, against a global average of circa 8.8 per cent (IDF 2017: 126, 41, 43). This In Brief highlights challenges shared with other PICs, especially those of climate change and problems with data, and presents certain FSM efforts to tackle diabetes in this context.

Diabetes

Diabetes is globally one of the four main NCDs, along with cardiovascular disease, cancer and chronic lung disease. High sugar levels in the blood cause diabetes, which can lead to complications such as blindness, amputations, diseases of the heart and kidney, and death (IDF 2017: 16–20). Conventionally, diabetes is divided into type 1, type 2 and gestational diabetes. Type 2 accounts for approximately 90 per cent of all diabetes cases and drives the international and Pacific increase. Type 2 typically affects adults.

In middle-income countries, which includes all the independent PICs, increasing NCDs exact huge personal and developmental costs. Governments are unable to meet the prolonged and growing expense of medical interventions for an increasing number of people suffering NCDs. UN Sustainable Development Goal number three aims to reduce globally premature mortality, that is deaths before 70 years of age, from NCDs by one third by 2030.

The Federated States of Micronesia

The FSM consists of 670 islands and four states, Yap, Chuuk, Pohnpei and Kosrae. They cover a vast expanse of the northern Pacific Ocean but have a land mass of only 701 square kilometres. The population of approximately 102,800 is culturally diverse and widely dispersed. The FSM is a lower middle-income nation administered by three layers of government – local, state and federal. Independent since 1986, it remains closely tied to its former administering power, the US.

In the FSM, female life expectancy is circa 71 and male circa 68 (SPC 2015). Premature mortality is too high. One study of premature mortality over the period 2003–12 found 89.3 per cent was caused by NCDs, with diabetes accounting for the largest share of 19.5 per cent (Gopalani et al 2017: 171, 175). Data on diabetes in FSM is unsettled. Like many other people from FSM, two authors of this In Brief, Dr Zag Puas and Marcus Samo, Assistant Secretary of Health and Social Affairs, have themselves been touched directly or indirectly by the disease.

Risk factors and climate change

All well-known NCDs share modifiable risk factors. Type 2 diabetes is said to be largely preventable and manageable by stopping smoking, increasing exercise and reducing intake of processed food. Routinely, type 2 is linked with obesity, a recognised phenomenon among Island populations.

Behaviour change can indeed be effective – for the patient or potential patient, for his or her community and for government agencies. Yet accomplishing behaviour change can be difficult. While NCDs are often termed diseases of 'modernisation' and 'lifestyle', Islanders often have scant access to the benefits of modernisation and little practical scope to choose a healthier lifestyle. The inherited risk of diabetes remains high.

Climate change, as manifested in global rises in temperature, appears to be universal. Often PICs experience climate change directly through the closeness of Island livelihoods to the sea. Changes to the Pacific region attributed to rising temperatures include increasing salination and rising sea levels. While the challenges of climate change in the Islands are well known, the same cannot be said for the links between the high incidence of NCD in the Islands and worldwide climate change.

Puas, Samo, and others see a connection in the FSM between climate change and NCDs as twofold: with increased

Australian Aid
PACIFIC RESEARCH PROGRAM
AN INITIATIVE OF THE AUSTRALIAN AID PROGRAM
Department of Pacific Affairs DEVELOPMENT POLICY CENTRE LOWY INSTITUTE
AUSTRALIAN NATIONAL UNIVERSITY
Australian National University

salination, the less one can traditionally harvest from the land, the more one must rely on processed food, and the more likely one is to develop an NCD; alternatively, greater cultivation of salt-resistant crops can increase consumption of locally produced food, which can decrease the risk of developing NCDs.

Diet and diabetes

A project led by Zag Puas illustrates this connection. The project centres on the Mortlock Islands in Chuuk. It is community-based and supported by the US Association of State and Territorial Health Officials (ASTHO) and the FSM's Department of Health and Social Affairs.

In Puas's words, the Mortlocks 'are at the cutting edge of climate change' (Puas 2017:5). With an elevation of three to four metres, these islands face obliteration through rising sea levels. Most Mortlockese, like other FSM citizens, depend on garden produce, along with seafood and imported food. Yet arable land is increasingly subject to salination and inundation from the sea.

Puas's solution to the twin excesses of saltwater and diabetes is salt-resistant taro. His project has identified a local variety of taro, *eot,* for cultivation. Aside from being salt-resistant, *eot* can be harvested after six months – unlike more common varieties of taro in the FSM that can take four years. Lukunor (Puas's home island), Oneop, Ta, Satowan (all in Chuuk) and Pohnpei host pilot gardens. It is too early for long-term results from this project to be seen.

While cultivating *eot* responds to changing environmental conditions resulting from climate change, Puas notes that consuming *eot* also has the beneficial outcome of reducing intake of processed food (Puas 2017, 20). This effect accords with the World Health Organization's recommendation to the FSM that local foods increasingly be produced and consumed to counter rising NCDs (WHO forthcoming: 8, 32–33).

Data and diabetes

Gaps, differences in measurement and changes in methodology affect the accuracy, comprehensiveness and comparability of diabetes data. The IDF notes that internationally many countries simply lack data, while its figures for PICs may be underestimates (IDF 2017: 31). Diabetes data in many PICs remain riddled with serious deficiencies. Marcus Samo and his office have contributed to recent studies, such as that by lead author Gopalani, cited here, seeking to strengthen the data basis for effective policy decisions in the FSM (e.g. Gopalani et al 2017).

Mitigating diabetes

Rates of diabetes cannot be lowered in the FSM or other PICs without a multi-pronged response based on local inputs. As Samo stresses, no headway can be made against type 2 diabetes or other NCDs without a whole-of-society, multi-sectoral approach.[1] The FSM's experience also shows that the need for accurate data is appreciated and how elevated rates of NCDs, including diabetes, can be linked with climate change.

Vicki Luker is a research fellow and Zag Puas a visiting fellow at the Department of Pacific Affairs, Australian National University; Marcus Samo is Assistant Secretary of Health and Social Affairs, the FSM; and Sally Goodspeed is currently studying toward a Masters of Asian-Pacific Studies, Australian National University.

Endnote

1. Marcus Samo. 7/12/2017. Assistant Secretary of Health and Social Affairs, the FSM, personal communication.

References

Gopalani, S. V., M. Samo, S. Soaz, J. D. Wincener, S. Mori, L. X-ner and K.L. Carter. 2017. Premature Mortality from Noncommunicable Diseases in the Federated States of Micronesia, 2003–2012. Asia Pacific Journal of Public Health, 29(3):171–79.

IDF (International Diabetes Federation). 2017.IDF Diabetes Atlas

Puas, Z. 2017. The Impact of Climate Change of Health in the Federated States of Micronesia: The Case of the Low-lying Islands of the Mortlocks. Draft paper. Canberra: ANU, Department of Pacific Affairs.

SPC (Secretariat of the Pacific Community). 2015. 2015 Pocket Statistical Summary. Noumea: SPC.

Tukuitonga, C. 26/10/2016. Diabetes Remains Major Health Challenge in the Pacific. Development Policy Blog: An ANU Weblog

WHO (World Health Organization). Forthcoming. Federated States of Micronesia (FSM) NCD Risk Factors Survey: A Combined Report from Chuuk, Pohnpei, Yap and Kosrae. NCD Risk Factors: STEPS Report in collaboration with World Health Organization (WHO).

The Department of Pacific Affairs (DPA) in the ANU College of Asia & the Pacific is a recognised leading centre for multidisciplinary research on contemporary Melanesia, Timor-Leste and the wider Pacific.

We acknowledge the Australian Government's support for the production of the *In Brief series.*